Appendix C
Glossary

Accretion
Natural or artificial buildup of land by the deposition of sediments.

Aeolian Transport
Sediments which have been transported by winds.

Advanced Nourishment
Placement of an additional amount of beach fill to offset the expected losses from the time of completion of the project to the first scheduled nourishment event.

Back Barrier
Pertaining to the lagoon complex in the lee of a coastal barrier island, barrier spit, or baymouth barrier.

Backshore
Zone of the shore lying between the foreshore and coastline comprising the berm or berms acted upon by waves only during severe storms.

Bar
A submerged or emerged embankment of sand, gravel, or other unconsolidated material built on the seafloor by waves and currents.

Bar Crest
Point of highest elevation associated with a bar system.

Bar Trough
Point of lowest landward elevation associated with a bar system.

Barrier Island
An elongated island running parallel to the mainland coast separated from the mainland by a lagoon or bay.

Bathymetry
Measurement of water depth in oceans, seas, rivers, and lakes.

Baymouth Barrier
A barrier structure extending partially or entirely across the mouth of a bay.

Beach
Zone of unconsolidated material that extends landward from the low waterline to the place where there is marked change in the material or physiographic form or to the line of permanent vegetation.

Beach Fill
Material placed on a beach to renourish eroding shores.

Beach Nourishment
Process of replenishing a beach with material (usually sand) obtained from another location.

Beach Profile
Intersection of the ground surface with a vertical plane.

Beach Renourishment
Process of replenishing a beach. It may be brought about by natural longshore transport or artificially by the deposition of borrowed material.

Beach Slope
Degree of inclination of the beach to the horizontal. Usually expressed as a ratio, such as 1:25 or 1 on 25, indicating 1 unit of vertical rise in 25 units of horizontal distance. Also expressed in a decimal fraction (0.04), degrees (2°18′), and percent (4%).

Berm
Nearly horizontal part of the beach or backshore formed by the deposit of materials by wave action. Some beaches have no berms and others have one or more.

Berm crest
Seaward limit of the berm.

Biogenic Sediment
Of biological origin. Usually sediments composed of the hard parts of plants or animals and organic reef masses.

Borrow Material
Material used for placement of artificial beach nourishment.

Bulkhead
A structure or partition to retain or prevent sliding of the land. A secondary purpose is to protect the upland against damage from wave action.

Calcareous Algae
A calcium carbonate-producing marine algae that contributes to the sediment supply, usually in tropical environments.

Composite Grain Size
Distribution of grain sizes determined using a group of sediment samples. For example, a composite grain size distribution can be determined for an entire beach profile location by combining all samples taken on that profile. Samples are usually done mathematically after a grain size analysis has been performed for each sediment sample.

Construction Profile
The resulting fill profile shape at the time of fill placement.

Construction Template
Template defining the shape of the fill profile at the time of fill placement.

Cross-Shore Transport
Movement of beach material perpendicular to the shore by waves and currents.

Cusp
A low mound of beach material, often in series, separated by crescent-shaped troughs spaced more or less at regular intervals along the beach face.

Deposition
Addition and buildup of sediment by the action of natural forces.

Depth of Closure
Depth beyond which sediments are normally affected by waves.

Depth of Effective Motion
The offshore limit of beach profile adjustment for a specific time scale of interest.

Design Template
The shape that fill material is expected to achieve after being worked by waves over the first few months to a year after fill placement. The design profile may be based on the pre-fill profile shape if the fill material is similar to the original native beach material.

Detached Breakwater
A structure detached from the shore constructed to protect a shore area, harbor, anchorage, or basin from waves.

Downdrift
Direction in which littoral drift is moving.

Dune
Hill or mound of windblown material, usually sand.

Dune Base
The toe of the dune on the seaward side.

Dune Crest
Highest elevation associated with a dune system.

Echinoids
A class of free-moving echinoderms, mostly with rigidly plated bodies.

Equilibrium Profile
Response of a beach to long-term or extreme wave conditions governed primarily by sediment size characteristics.

Erosion
Removal of sediment by the action of natural forces.

Esker
Long narrow ridges of coarse sand and gravel produced by glacier processes usually extending in a sinuous course, roughly parallel with the direction of glacier movement.

Estuary
A widened tidal mouth at a river valley where fresh water comes into contact with seawater, resulting in mixing and a complex biological and chemical environment.

Eustatic Sea Level Change
Change in the relative volume of the world's ocean basins and the total amount of ocean water. It must be measured by recording the movement in sea surface elevation relative to a stable, undeformed, universally adopted reference frame.

Fall Velocity
Speed at which an object falls through a fluid media governed by the object's effective diameter and fluid viscosity.

Feeder Beach
An artificially widened beach serving to nourish downdrift beaches by natural littoral currents or forces.

Fetch
Areas in which seas are generated by the wind having a fairly constant direction and speed.

Fillet
Accumulation of sediment at a littoral barrier such as a jetty.

Fluvial
Pertaining to streams; e.g., fluvial sediments.

Foraminifera
Protozoans characterized by tests of one to many chambers composed of calcite or of agglutinated particles.

Foredune
Front dune immediately behind the backshore.

Foreshore
Area that is ordinarily traversed by the uprush and backwash of waves as the tides rise and fall.

Groin
Shore protection structure usually built perpendicular to the shoreline to trap littoral drift or reduce erosion of the shore.

Headland
High, steep-faced promontory extending into the sea or lake.

High-Tide Mark
Limit of wave uprush as it exists at the time samples are taken, many times marked by a line of debris running parallel to shore indicating the maximum elevation reached by each rising tide.

Hindcasting
Use of historic synoptic wind data to calculate characteristics of waves that probably occurred in the past.

Inlet
A connecting passage between two bodies of water.

Intersecting Profile
Based on the equilibrium profile approach, the profile after nourishment intersects the native profile landward of the depth of closure. Dependent upon inequalities between the fill and native beach sediments.

Intertidal
Between high and low tide.

Isopach Map
Contour map showing the thickness of a deposit between two physical or arbitrary boundaries.

Jetty
A shore-perpendicular structure built to stabilize an inlet and prevent the inlet channel from filling with sediment.

Lagoon
Open water between a coastal barrier and the mainland.

Leeward
Direction toward which wind is blowing or direction toward which waves are traveling.

Littoral Drift
Movement of sediment alongshore. Also, the material being moved alongshore.

Littoral Transport
Movement of littoral drift in the littoral zone by waves and currents. Includes movement parallel (alongshore) and perpendicular (cross-shore) to the shore.

Littoral Zone
Indefinite zone extending seaward from the shoreline to just beyond the breaker zone.

Longshore Transport
Transport of littoral sediments by a current flowing essentially parallel to the shoreline, usually generated by waves breaking at an angle to the shoreline.

Low-Tide Mark
Limit of wave backrush, which is usually marked by a small declivity in the profile. This feature, known as the step, may not always be evident.

Macrotidal
Tidal ranges occurring where the tide is dissipated across wide sloping areas or confined to estuaries or gulfs with a typical range greater than 4 m.

Maximum Net Benefits
Difference in damages to a project area between without-project and with-project conditions.

Mesotidal
Tidal ranges occurring where both microtidal and macrotidal features are found (ranging from 2-4 m).

Microtidal
Tidal ranges occurring on open ocean coasts having a range less than 2 m.

Mean High Water (mhw)
Average height of high waters over a 19-yr period.

Mean Low Water (mlw)
Average height of low waters over a 19-yr period.

Median Grain Size
Diameter of sediment which marks the division of a grain size sample into two equal parts by weight.

Mica
A naturally occurring silicate mineral contained in many sediment-producing rocks.

Mid-Tide Mark
Location approximately midway between the low-tide line and the high-tide mark.

Native Beach
Characteristics of a beach prior to the influence of artificial modifications.

Nearshore
Indefinite zone extending seaward from the shoreline well beyond the breaker zone.

Non-Intersecting Profile
Based on the equilibrium profile approach, the nourished profile does not intersect the native profile before the closure depth and is dependent upon inequalities between the fill and native beach sediments.

Offshore
Zone extending from the breaker line to the seaward edge of the continental shelf.

Onshore
Direction landward from the sea or other large bodies of water.

Outwash Plain
Body of outwashed sediment that forms a broad plain.

Overbuilding
Placement of required fill volume onshore in a construction template with the beach berm at the design elevation, but with a berm width greater than the design berm width and fill slope that is steeper than the equilibrium slope on the seaward side.

Overfill Ratio
Volume of borrow material required to produce a stable unit of usable fill material with the same grain size characteristics as the native material.

Periodic Nourishment
Periodic placement of artificial beach fill for replenishing a beach.

Planform
The outline or shape of a body of water as determined by the still-water line.

Profile Shape Parameter
Based on the equilibrium profile approach, the shape of the equilibrium profile is dependent on a sediment characteristic (A) which is governed by size or fall velocity alone.

Profile translation
Seaward translation of a nourished profile when using similar borrow material.

Quartz
Mineral that is commonly the primary component of beach sand.

Renourishment Factor
Technique used to predict how often renourishment will be needed using the selected borrow material.

Revetment
Facing of stone or concrete built to protect a scarp, embankment, or shore structure against erosion by wave action or currents.

Rip Current
Strong current flowing seaward from the shore. It usually appears as a visible band of turbid water.

River Currents
Currents produced by incoming river flow.

Runup
Rush of water up the face of a structure or beach due to waves.

Scarp
More or less continuous line of cliffs or steep slopes facing in one general direction, which are caused by erosion or faulting.

Seawall
Structure separating land and water areas, primarily designed to prevent erosion and other damage due to wave action.

Seaward
Direction toward the open ocean or other large body of water.

Sediment
Solid fragmented material (sand, gravel, silt, etc.) transported by wind, water, or ice or chemically precipitated from solution or secreted by organisms.

Shoal
Sedimentary structure that accumulates near inlets due to sediment transport by tidal currents associated with inlets and navigation channels.

Shoaling
Process of sediment deposition causing the accumulation of shoaling, or the process of becoming shallower.

Shore
Narrow strip of land in immediate contact with the sea or other large bodies of water, including the zone between high- and low-water lines.

Shoreface
The narrow zone seaward from the low-tide shoreline, covered by water, over which the beach sands and gravels actively oscillate with changing wave conditions.

Shoreline
Intersection of a specified plane of water with the shore or beach. Line delineating the shoreline on National Ocean Survey (NOS) nautical charts and surveys.

Significant Wave Height
Average height of the highest one third wave in a wave group.

Sorting
Process occurring during sediment transport that tends to separate particles according to their size, density, and shape.

Spit
An elongated, usually sandy, feature aligned parallel to the coast, that terminates in open water.

Storm Surge
A rise above the normal water level on the open coast due to wind stress and low barometric pressure.

Stratigraphy
Pertaining to the study of stratified rocks and sediments.

Subaqueous Processes
Processes occurring under water.

Submarine Canyon
Relatively narrow, deep depression with deep slopes, with bottom grades continuing downward occurring on the continental shelf, shelf break, and slope.

Submerged Profile
Based on the equilibrium profile approach, the nourished beach profile does not intersect the native profile and no subaerial beach exists after equilibrium and is dependent upon inequalities between the fill and native beach sediments.

Survey Sled
An instrument pulled along the ocean bottom to survey coastal and beach areas.

Terminal Structure
A structure placed at the terminating ends of a beach fill project to minimize transport of the borrow material out of the project area.

Terrestrial Sediment
Sediments derived from inland geologic sources.

Tidal Current
Currents created by the propagation of tides through coastal areas which induces water surface gradients and currents.

Updrift
Direction along the coast in which littoral drift material is moving.

Wave Diffraction
Phenomenon by which wave energy is transmitted laterally along the wave crest.

Wave Direction
Direction from which a wave approaches.

Wave Height
Vertical distance between a crest and the preceding trough.

Wave Period
Time for a wave crest to traverse a distance equal to one wavelength or the time for two waves to pass a fixed point.

Wave Refraction
Wave transformation in which direction and height of the wave are modified due to the change in wave phase speed as water depth changes.

Wave Setup
Superelevation of the water surface over normal surge elevation due to the onshore gradient of wave momentum.

Wave Spectra
In wave studies, a graph, table, or mathematical equation showing the distribution of wave energy as a function of wave frequency. The spectrum may be based on observations or theoretical considerations.

Wave Steepness
Ratio of wave height to wave length.

Wave Transformation
Changes in the physical characteristics of a wave as it travels into shallow water.

Wind-Driven Currents
Currents induced in the water column by wind stresses on the water's surface, especially during storms.

With Project
Estimate of damages after construction of a coastal project.

Without Project
Estimate of damages that would occur in the absence of a coastal project.